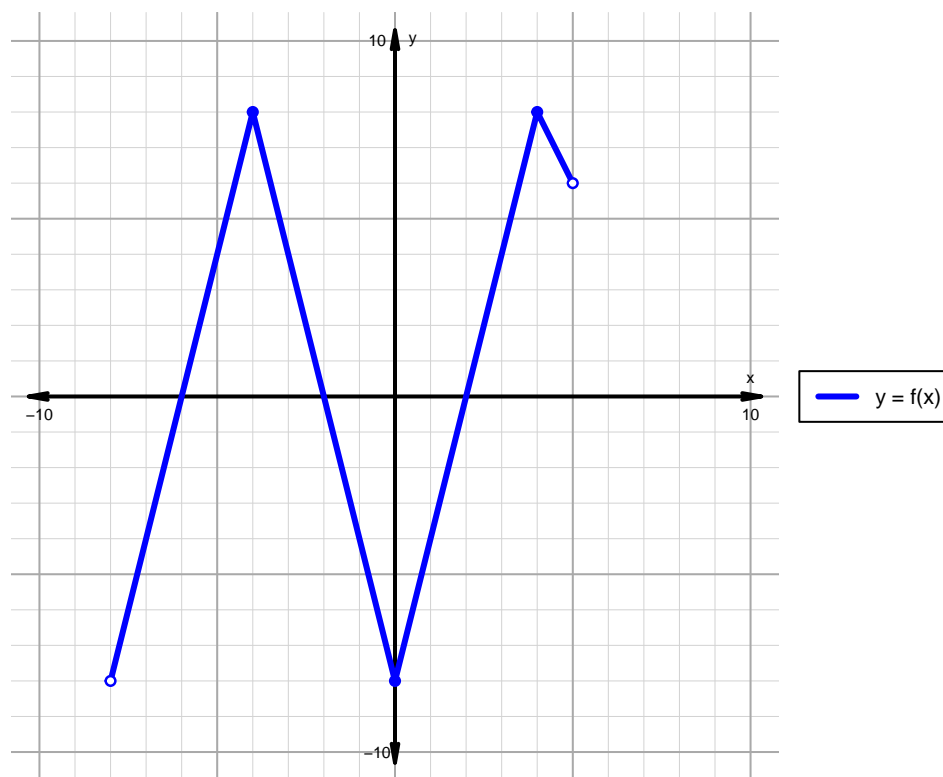


Name: \_\_\_\_\_

Date: \_\_\_\_\_

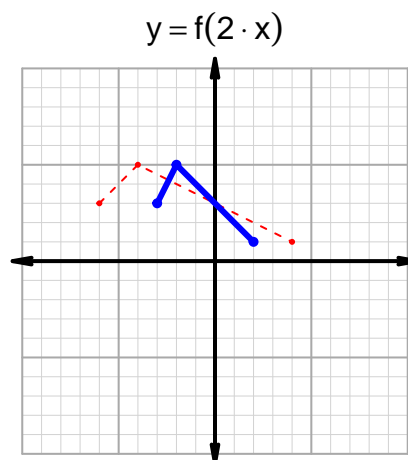
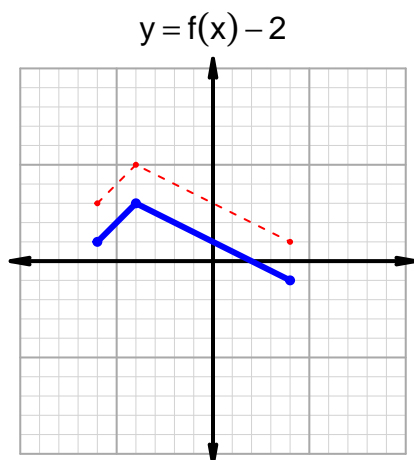
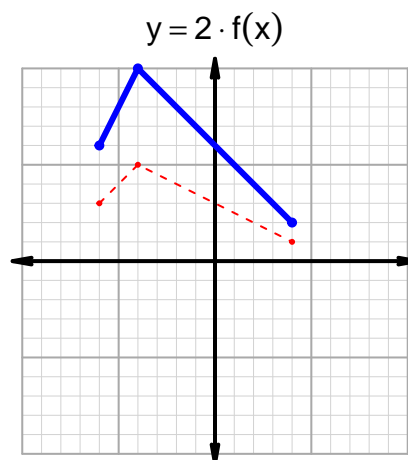
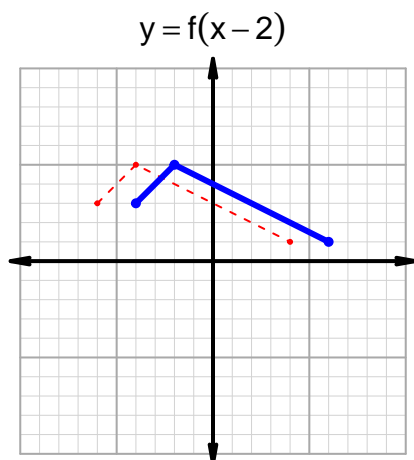
**Intervals, Transformations, and Slope Solution (version 87)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-6, -2) \cup (2, 5)$
Negative	$(-8, -6) \cup (-2, 2)$
Increasing	$(-8, -4) \cup (0, 4)$
Decreasing	$(-4, 0) \cup (4, 5)$
Domain	$(-8, 5)$
Range	$(-8, 8)$

## Intervals, Transformations, and Slope Solution (version 87)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 37$  and  $x_2 = 49$ . Express your answer as a reduced fraction.

$x$	$g(x)$
37	59
49	69
59	49
69	37

$$\frac{g(49) - g(37)}{49 - 37} = \frac{69 - 59}{49 - 37} = \frac{10}{12}$$

The greatest common factor of 10 and 12 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{5}{6}$$